The Emigration of Immigrants, Return vs. Onward Migration: Evidence from Sweden*

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Abstract

Using data on registered emigration from Sweden from 1991-2000, this study analyzes emigration propensities for natives and immigrants delineating among immigrant emigrants between return and onward migration. Return migration is defined as migration back to source countries and onward migration as emigration to third country destinations. Onward migration constitutes an increasing proportion of emigration from Sweden and is the more common form of emigration among immigrants from Africa and Asia. Results indicate that emigrants in general are positively selected in terms of upper education, a result driven by the positive association between upper education and emigration among onward migrants. Predicted age-income profiles show that although emigrants in general have higher adjusted mean income levels, up to the age of 35-40, than non-emigrants, onward migrants have lower predicted income levels across the age distribution due to this groups relatively low employment levels in Sweden.

Keywords: Emigration, Return Migration, Onward Migration, Immigrant/Emigrant Earnings
JEL Classification: J61, J31

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1. Introduction

Much empirical work has been aimed at the study of non-random out-migration and more specifically on the emigration of immigrants.[1] These studies recognize that migration from one country to another is not permanent and that non-random out-migration can bias cohort-based measurements of earnings and employment assimilation. In addition, labor migration to compensate for ageing populations and low fertility is becoming increasingly relevant to many European countries implying that an understanding of the determinants of out-migration and the selection of immigrants who emigrate is of crucial importance in establishing relevant labor migration policies. The studies to date have analyzed emigration propensities generally or with particular focus on return migration.[2] The contribution of this study is to delineate between return and onward migration where the former is defined as migration back to source countries and the latter as migration to third country destinations. Although recent work has looked into the dynamics of repeat migration, that is to say frequent migration between source and host country, few empirical studies have specifically addressed the determinants behind onward migration or studied the composition of this group of migrants.[3]

Early migration theory posed that migration decisions are based primarily on an evaluation of expected incomes in host countries relative to source countries, taking into account migration costs (Hicks, 1932; Borjas, 1999). Cross-country differences in earnings opportunities however determine only the size and the direction of migration flows, not who expects to benefit from migration. Selection is the key issue behind the Roy model comparing expected earnings for migrants in the source and host country (Roy, 1951; Heckman & Honoré, 1990;

[1] See for example, Andersson *et al.*, 2000, Borjas (1987, 1989), Borjas & Bratsberg (1996), Constant & Massey (2002), Constant & Zimmermann (2003), DaVanzo (1983), DeVortex & Ituralde (2000), Dustmann (2000, 2003), Duleep (1994), Edin, Lalonde & Åslund (2000), Jasso & Rosenzweig (1982), Klinthäll (1998, 1999), Lindstrom & Massey (1994), Longva (2001), Pedersen, Røed & Schröder (2002), Ramos (1992), Røed (2002a, 2002b), Schröder (1996) and the references therein.

[2] For studies focusing on return migration see for example, Borjas (1989), Constant & Massey (2002), Dustmann (1995, 1996, 2003), Galor and Stark (1991), Klinthäll (1998, 1999, 2000, 2003) and the references therein.

[3] Hammarstedt (2004) analyses the emigration of immigrants from Sweden with a separate analysis for return and onward migrants. This study focuses on the influence of unemployment and welfare pick-up on emigration probabilities for emigrants from 14 countries. DaVanzo (1983) studies return and onward migration between US counties. See also Constant & Zimmermann (2003) for a study on repeat migration.

Borjas, 1999). Given a positive skill correlation across countries, the model predicts a positive selection when migrants have above-average earnings in both source and host country and a negative selection when migrants have below-average earnings in both countries. If however, skill correlations between countries are small or negative, migrants may have below average earnings in the source country and above-average earnings in the host country.

A potential negative skill correlation across countries is of particular interest when studying the emigration of immigrants from Sweden. Many immigrant groups, and especially those of non-European origin, have documented difficulties in attaining employment commensurate with educational levels but are simultaneously protected by extensive welfare programs aimed at insuring marginalized workers.[4] Immigrant emigrants are characterized by below average employment, and therefore income, levels in Sweden but have relatively high education levels. These emigrants may therefore be motivated to leave by higher expected incomes abroad if better matches between skills and employment are realized. This may especially be true for onward migrants who by definition are not emigrating due to preferences for living in the source country. Given the relatively high standard of living at the lower end of the earnings distribution, characteristic of Sweden, without an expectation of higher incomes or better employment opportunities in third country destinations, immigrants have little incentive to emigrate.

The theoretical work on immigrant emigration has focused on return migration. Borjas and Bratsberg (1996) attribute return migration to an optimal residential location plan over the life cycle where immigrants return to source countries due to the realization of pre-determined savings goals or due to erroneous information about the savings/earnings potential in the host country. Other theories attribute return migration to region-specific preferences (Hill, 1987;

[4] Income differentials between immigrants and natives have been documented in numerous studies. See for example Aguilar & Gustafsson (1994), Edin & Åslund (2001), Edin *et al*. (2000), le Grand & Szulkin (2000) and Österberg (2000). These studies find that a large proportion of income differentials are driven by differences in employment levels between immigrants and natives. For studies on employment differentials see Arai *et al*., (2000), Ekberg (1991), Nekby (2003), Lundborg (2000) and Wadensjö (1997).

Djajic and Milbourne, 1988), higher purchasing power of host country currency in source countries (Dustmann, 1995, 2001) or to greater returns for human capital acquired in the host country (Borjas and Bratsberg, 1996; Dustmann, 1996; Røed, 2002a, 2002b). Borjas and Bratsberg (1996) also show that the selection of emigrants from a particular area reinforces the initial selection of immigrants to that area. If a cohort of immigrants is selected from the lower end of the source country income distribution, emigrants will be a positive selection of this migration cohort and vice versa. For refugee migrants, return migration may in addition be due to non-economic factors such as changes in the political climate of source countries.

Within this theoretical context, onward migration may be a consequence of the same optimization process that characterized the original migration decision. Initial migration to a host country increases the information available concerning employment/earnings opportunities of other previously unconsidered regions. Individuals then continue migrating to new areas as part of an optimal life-cycle location plan. In addition, erroneous information on the employment and earnings opportunities available to immigrants in Sweden may lead to onward migration. Within the European context, attained citizenship in one country opens up employment opportunities in other European Union countries. Finally, as initial destinations may have been limited for refugee migrants, onward migration among this group may be more economically motivated than the original refugee-based migration.

-- Figure 1 here --

As shown in Figure 1, Sweden, since the end of WWII, has primarily been a nation of net immigration.[5] A majority of migration to Sweden during this period has been and continues to be from other Nordic countries, primarily from Finland. Formally, a common Nordic labor market was established in 1954 but migration legislation was, until the late 1960's, non-

[5] The exception being in the early 1970's due to this period's economic crisis coupled with expanding employment opportunities in Finland.

restrictive and aimed at attracting foreign labor to an expanding export industry. Sweden also signed the Geneva Convention in 1954 opening for refugee migration. Until the mid 1970's, 90 percent of immigration stemmed from other European countries. Thereafter, non-European immigration increased and now constitutes approximately 50 percent of total immigration.[6] The majority of emigration during this period has been due to the out-migration of the foreign born. Since 1964, approximately 60 percent of total emigration is due to the out-migration of foreign citizens.[7] Much of the early emigration of foreign citizens was in the form of return migration, however onward migration is becoming increasingly important. The data used in this study indicate that during the 1990s, onward migration constituted approximately 28 percent of the total out-migration of immigrants in Sweden.[8]

The early empirical work on Sweden indicates that emigration propensities increase with education, decrease with age and are u-shaped in terms of income with high emigration probabilities for those with little or no income as well as for those with high incomes (Pedersen *et al.*, 1999; Andersson *et al*., 2000). These studies are primarily based on Swedish citizens or those born in Sweden.

Studies focusing on immigrant emigration have focused on return migration. Edin *et al*. (2000) find that immigrants that emigrate within 5-10 years of emigration have systematically low or zero income levels. Klinthäll (1998, 1999) looks at the return migration patterns of male immigrants from Germany, Greece, Italy and the United States and finds that emigration patterns vary by source country. Both studies indicate that economic performance in Sweden is an important determinant of return migration. Hammarstedt (2004) investigates the effect of

[6] Early refugee migrants came from Hungary in the 1950's and Greece, (former) Czechoslovakia and Poland in the 1960's. Thereafter refugees from non-European countries dominated, in the 1970's from Chile, Turkey and Lebanon followed in the 1980's by migration from Iran and Iraq. Finally refugees from former Yugoslavia began arriving in the mid 1990's.
[7] The proportion of emigrants with Swedish citizenship has increased over time. In 2003 Swedish citizens constitute 57 percent of total emigration.
[8] The proportion of onward migrants increased from 12 percent of total emigration in 1991 to 34 percent of total emigration in 2000.

welfare pick-up and unemployment on emigration probabilities and finds that unemployment is a positive indicator for both return and onward migration while welfare participation lowers emigration propensities for non-European immigrants but is positively associated with return migration for Nordic immigrants.

Results presented here confirm that emigration is positively associated with education, for natives monotonically so while for immigrants in general, from university educations upwards. For immigrant emigrants, the positive correlation between higher education and emigration is driven by onward emigration. Missing information on education is also found to be a positive predictor of emigration. Predicted age-income profiles indicate that immigrant emigrants have higher predicted income levels up to the age of 35-40 than immigrant stayers. For natives, emigrant mean income is lower across the age distribution.

The remainder of the paper is as follows. The next section describes the data including an overview of descriptive statistics and introduces the empirical set-up. Section 3 presents the results followed by concluding remarks in Section 4.

2. Data and Empirical Set-up

The data on emigrants comes from Statistics Sweden (SCB) identifying all individuals 16 years and older who have emigrated from Sweden during any given year between 1991-2000. Included is information on year of emigration, destination and the full migration history to and from Sweden backwards in time for this population of emigrants. The emigrant data has been matched to LOUISE, a longitudinal dataset covering the entire population of Sweden over the age of 16 from 1990 to at present, 2000.[9] This data contain a rich set of variables on education, employment, income, family, marital status, workplace as well as region of origin and year of immigration for immigrants to Sweden. From the original LOUISE dataset, a

[9] LOUISE is the acronym for Longitudinal Database on Education, Income and Employment from Statistics Sweden (SCB)

representative sample of non-emigrants is drawn for comparative purposes. Non-emigrants are defined as individuals not registering emigration from Sweden up to and including the year 2000.

To be registered as an emigrant an individual must intend to stay abroad for at least one year and is registered as an emigrant on the actual day of emigration or, if registration occurs later, at the time authorities receive notification of emigration. This study therefore focuses on registered emigrants and does not take into account the possible underreporting of emigration.[10] The sample estimated on is restricted to the working age population, i.e., individuals between 16 and 64 years of age. In order to separate onward migration from repeat migration, i.e., migrants who repeatedly immigrate and emigrate to and from Sweden, repeat migrants are dropped from the sample.[11]

The primary purpose of this study is to examine emigration propensities for immigrants, delineating between return and onward migration, as well as to compare non-emigrant and emigrant earnings. Initially, native and immigrant emigration propensities are estimated separately in order to study if the determinants of emigration differ between native and immigrant emigrants. Emigration probabilities are then estimated for immigrants only as well as separately for return and onward emigration. The probability of emigrating is estimated using a linear probability model based on variations of the following basic model:

$$\Delta P\left(y=1 \mid \mathbf{x}\right)=\beta_{jt}\Delta X_{jt} \qquad (1)$$

[10] Individuals may for example leave the country without officially registering emigration in order to maintain various insurance benefits.

[11] To be specific, individuals who have emigrated and re-immigrated to Sweden prior to the observation period are dropped from estimation. 10,567 observations (N*T) of natives are dropped due to repeat migration and 11,423 observations among immigrants amounting to 0,5 percent of the original native data and 3 percent of the original immigrant data. Repeat migrants are predominantly of Nordic origin, male, single and in the 36-55 age category. The final data set covers the period 1991-2000 and has 314,213 observations on immigrants and 1,821,314 observations on natives.

The conditional probability of emigrating is assumed to be linear in the parameters ß$_j$ and the coefficients measure the change in the probability of success, $P(y=1)$, when X_j changes, all else constant.[12]

Emigrants are identified by year of emigration; y is therefore a binary dependent variable indicating whether or not an individual has emigrated during year t. Estimations control for income, age, education, marital status, the prevalence of small children and common time effects. Estimations on immigrants in addition, include controls for region of origin and immigration cohort.[13]

Income is measured as gross labor income and/or gross income from business activities. Included in the measure are a number of insurance benefits such as compensation for sick leave and parental leave. The income measure uses the longitudinal feature of the data by tracking individuals backwards from the year of emigration and averaging over the available (lagged) observed years.[14] For comparison, mean lagged income for non-emigrants is also computed. Income is in 1990 prices, deflated by the consumer price index. Real (lagged) mean income is factorized into four categorical variables where the first category measures zero income and the highest category measures real mean income over 300,000 Swedish kronor in 1990 prices.

The immigrant data contain information on region of birth where region is divided into eight categories. These are Africa, Asia, East Europe, North America, Oceania, the Nordic countries (excluding Sweden), South America and West Europe.[15] The available data do not allow for a finer disaggregating of origin. Controlling for region of origin is of interest in

[12] Logit and probit models are also estimated as a check of robustness.
[13] Standard errors are corrected in all estimations for heteroscedasticity using the Huber/White/sandwich estimator of variance.
[14] Traditional panel estimation techniques are not used as a sample of non-emigrants is compared to the full population of emigrants for each available year implying non-trivial weighting problems.
[15] Note that Turkey, Cyprus and the Middle Eastern countries are classified in the Asian category.

order to evaluate push/pull factors of emigration. Immigrants with high levels of education but low employment levels may be pushed to emigrate in order to seek better employment opportunities elsewhere. Non-Europeans emigrants, for example, have low average employment and income levels, but also relatively high mean education levels and may therefore be over represented among emigrants due to push factors.

A full set of dummy variables for immigration year are included in estimation on immigrants in order to check for potential cohort differences in emigration propensities. Before the mid 1970's immigration to Sweden was characterized by a combination of labor and refugee migration from primarily European and Nordic countries. After this period, refugee immigration dominates from predominantly non-European countries although labor migration from Nordic, European and non-European countries has continued as well as family unification migration. [16]

Education is measured as highest completed degree and is coded into five categorical groups measuring completion of primary, secondary, university or Ph.D. degrees as well as a fifth category for missing information on education. Missing information on education is found primarily among immigrant emigrants. Thirty four percent of foreign-born emigrants from Sweden have no registered information on education.[17] Characteristic of those with missing information on education is a short duration of stay in Sweden. In addition this group is primarily male, young, single and without small children.

[16] Separate estimations are also run including a control for duration of residence (quadratic). Duration of residence is measured from year of latest immigration and therefore underestimates the number of years an individual has resided in the host country for repeat migrants. As full migration histories are available for our population of emigrants, this problem is eliminated for emigrants as repeat migrants have been identified and dropped from estimation. Underestimation of duration of residence is a potential problem only for our sample of non-emigrant immigrants where migration histories are not available. In particular Nordic immigrants are likely to have biased estimates of duration of residence due to low migration costs and the fact that the Nordic labor market has been open since 1954.

[17] The percentage of emigrants with missing information on education varies by region of origin: South America 25%, Asia, Africa and Eastern Europe 33%, Scandinavia 36%, West Europe 37%, Oceania 48% and North America 52%.

In a second stage of the analysis emigrant earnings are examined and compared to non-emigrant (stayer) earnings. As annual income is missing for a large proportion of emigrants during the year of emigration, average lagged values are regressed. Separate income regressions are estimated for emigrants and stayers controlling for age (quadratic), education, gender, marital status, children and among immigrants, for immigration cohort (year) and region of origin. Based on these income regressions, in-sample age-income profiles are predicted for emigrants and stayers. The age-income predictions are aimed at capturing average adjusted income levels for emigrants and stayers addressing the problem that a large number of emigrants have no reported income in Sweden prior to emigration.

In total, 28 percent of working age emigrants are onward migrants. As shown in figure 2 above, this percentage varies by region of origin. Emigrants from Asia and Africa are more likely to move to third country destinations than return to source countries.[18]

-- Figure 2 here --

Descriptive statistics shown in Table 1 indicate that emigrants are more highly educated than non-emigrants. This is true for both the native and immigrant population. A large proportion of foreign-born emigrants have no registered information on attained education levels. Education disparities become even more pronounced when percentages are based on individuals with known education levels only (in parenthesis). Thirty-one percent of return migrants have at least a university education compared to 25 percent of immigrant stayers. For onward migrants, the difference is even larger with 42 percent of onward migrants registering a university degree or higher. In terms of income, emigrants in general are over-represented in the zero-income category and are somewhat more heavily concentrated in the

[18] Emigration propensities also vary by region of origin. Information from Statistics Sweden (SCB) for the year 2000 indicate that 0.2 percent of natives emigrate, 1,9 percent of the Nordic born, 1.2 percent of Europeans, 1.6 percent of Africans, 3.9 percent of North Americans, 1.3 percent of South Americans and 1.0 percent of Asians.

highest income group, over 300,000 Swedish kronor (1990 prices), than non-emigrants. Emigrants in general are also more heavily concentrated in the younger age categories and are to a much larger degree single and without small children. In terms of region of origin, return migrants are more heavily concentrated among those with Nordic heritage while onward migrants are more heavily drawn from East European, African and Asian backgrounds.

-- Table 1 here --

3. Empirical Results

3.1. Emigration Propensities

Initially the probability of emigrating is estimated separately for natives and immigrants using linear probability models and controlling for education, income, age, small children, marital status, common time effects and for immigrants, region of origin and immigration year. The results presented in Table 2 (column 1 and 2) show, in line with previous studies on Swedish data (See Andersson *et al*., 2000; Pederson *et al*., 2002; and Klinthäll, 1998, 1999), that the probability of emigrating increases with education, monotonically so for natives and for those with at least a university education for immigrants. Missing information on education is also positively associated with a higher probability of emigration.[19]

-- Table 2 here --

Emigration propensities are u-shaped with respect to income and positively correlated with zero mean income.[20] Individuals between the ages of 26-35 have the highest emigration probabilities relative all other working-age individuals. Women have a slightly higher

[19] Missing education may be correlated with the other education categories. All regressions are re-estimated dropping individuals with missing information on education as a check of robustness with no notable change in results.

[20] Individuals with zero mean income are clustered in the middle age categories, i.e., the 26-35 (32 percent) and 36-55 (38 percent) age group. Twenty-six percent have missing values on completed education. Individuals with zero mean income may be out of the labor force due to schooling, early retirement, health disability, military service and parental leave or may have emigrated prior to registration of emigration.

probability of emigrating among natives and a lower probability among immigrants. Marriage and small children are associated with lower emigration probabilities.

Immigrant emigration propensities decrease with duration of residence.[21] In terms of differences by region of origin, immigrants from North America and Oceania have, relative to West Europeans, higher probabilities of emigrating from Sweden. Individuals born in the other identified regions have lower relative probabilities with the exception of those born in the other Nordic countries who have insignificantly different emigration propensities to West Europeans.

Delineating immigrant emigrants into two groups reflecting return or onward migration yields interesting differences in terms of the effect of education on estimated emigration propensities. Estimations on return migration indicate that individuals with a university education do not significantly differ, in terms of emigration probabilities, from those with a primary education only. For onward emigrants, secondary education is no longer a significantly negative indicator for emigration and all higher education levels are positively correlated to emigration. This implies that among immigrants, the positive correlation between education and emigration is largely driven by onward emigrants.

Other interesting differences include that duration of residence is insignificant for onward migration probabilities but negatively correlated with emigration for return migrants.[22] Relative to West Europeans; North Americans, the Nordic-born and those from Oceania indicate higher emigration probabilities when emigration is back to source countries. For onward migrants and again in comparison to West Europeans, those from North America, Africa and Oceania have higher emigration probabilities, all else equal.

[21] Estimations reported in Table 2 control for a full set of dummies indicating year of immigration. Results for immigration year are not shown in Table 2 but are available upon request. In addition separate estimation controlling for duration of residence (and its quadratic) were run as a check of robustness, also available on request.

[22] Results available upon request.

In summary, natives and immigrants have very similar determinants for emigration.[23] In terms of immigrant emigration, emigration propensities differ with respect to destination. Return migration probabilities are positively correlated with education only for those with Ph.D. degrees while onward migrants are positively selected for all upper education categories. In other words, university educated immigrants have a higher probability of emigrating to third country destinations than immigrants with lower education levels.

3.2. Non-emigrant vs. Emigrant Income

The unadjusted emigrant income gap, i.e., the unadjusted differential between non-emigrant and emigrant mean income levels, shows that emigrants have significantly smaller mean income levels.[24] Native emigrant income levels are approximately 80 percent of non-emigrant income levels. Immigrant emigrants have a mean income level equal to approximately 72 percent of non-emigrant income. The income differential to stayers is slightly smaller for return migrants (78 percent) but considerably larger for onward emigrants (59 percent).

Separate income regressions for each subgroup (natives and immigrants, emigrants and stayers) are estimated controlling for education, age (quadratic), gender, marital status, small children, and common time effects, as well as region of origin and immigration year in estimations on immigrants. Results, presented in Table 3, indicate that non-emigrants and emigrants are remunerated differently for similar attributes. The effect of missing education varies for example, by both immigrant and emigrant status. Natives are remunerated negatively for missing education while immigrant emigrants are remunerated positively. This variable appears to be capturing different effects depending on migration status. Individuals

[23] The only difference found is the effect of a secondary education on emigration probabilities where in comparison to individuals with a primary school education only, natives with a secondary education show positive emigration probabilities while immigrants show negative emigration probabilities. Native females have higher emigration probabilities than their male counterparts while the opposite is true for immigrant females.
[24] See Sample Means in Table 1. Hourly wages are not available in the data. The focus on annual income is of interest in terms of understanding the fiscal implications of emigration from Sweden.

born in different regions are, controlling for differences in education, age and gender, also remunerated differently. In comparison to Western Europeans, East European, South American, African and Asian immigrants experience an income penalty, ceteris paribus. North American return migrants have lower mean income levels than the reference group (West Europeans) while North American onward migrants have higher income levels. The same pattern holds true for immigrants born in Oceania.

Information on income is missing for a large proportion of immigrants and especially for immigrant emigrants.[25] In order to appreciate differences in potential income levels between emigrants and stayers, in-sample age-income profiles are predicted for natives and immigrants based on the income regressions shown above (separately for men and women).[26]

-- Figure 3 & 4 here --

The figures above clearly indicate that among immigrants, male emigrants have higher predicted income levels than stayers up to the age of 35 and for return migrants up to the age of 40. Lower relative mean income levels after the age of forty is partially a consequence of the changing composition of immigrants due to non-random out migration but can also be explained by potentially higher proportions in early retirement or on disability among elderly emigrants. Onward migrants have lower predicted income levels than non-emigrants over the entire age range. This is largely due to the fact that onward migrants are more heavily composed of African and Asian immigrants with known income penalties, ceteris paribus. For natives, predicted age-income profiles indicate that that emigrants have lower mean income levels than stayers across the working age distribution.

[25] Previous assimilation studies on Sweden have documented that income differentials between natives and immigrants are driven by differences in employment and to a much smaller degree by hourly wage differentials. See Arai *et al*. (2000a; 2000b), Bevelander & Skyt Nielsen (1999), Edin & Åslund (2001), leGrand & Szulkin (2000), Nekby (2003), Rashid (2002) and Rosholm *et al*. (2000).

[26] Results for women are presented in the appendix, Figure A1 and A2.

4. Conclusions

This study has analyzed the determinants of emigration for both natives and immigrants in Sweden, delineating among foreign-born emigrants between return and onward migration. Return migration implies emigration back to origin countries while onward migration indicates emigration to third country destinations. Results show that emigrants are positively selected in terms of education, for natives monotonically for all education categories while for immigrants for university educations only. Missing information on education is found to be a positive predictor of emigration. Emigration propensities are otherwise u-shaped with respect to non-zero income levels, but positive for those registering zero mean incomes.

In terms of immigrant emigration, onward emigrants are more positively selected in terms of education. Results indicate that university education is positively associated with emigration for onward migrants while insignificant for return migrants. A Ph.D. is a positive indicator for both types of emigration. The composition of emigrants also varies by region of origin where, controlling for human capital differences and in relation to Western Europeans, immigrants from Africa, North America and Oceania are more likely to emigrate to third country destinations.

Income regressions show that non-emigrants and emigrants are remunerated differently for similar attributes. In particular, missing information on education has a positive marginal effect on income for foreign-born emigrants and negative effect for native emigrants. Predicted age-income profiles indicate that immigrant emigrants have higher predicted income levels up to the age of 35-40 than immigrant stayers.

These results imply that skilled immigrant emigrants are pushed to migrate in the expectation of higher remuneration for observed skills in third country destinations where preferences for home country living are by definition, a less decisive factor. Due to Sweden’s relatively

compressed wage distribution and extensive welfare benefits, low skilled immigrants have incentives to stay in Sweden where the standard of living is high in an international perspective. Highly skilled immigrants but with limited employment opportunities in Sweden may be driven to try their luck elsewhere.

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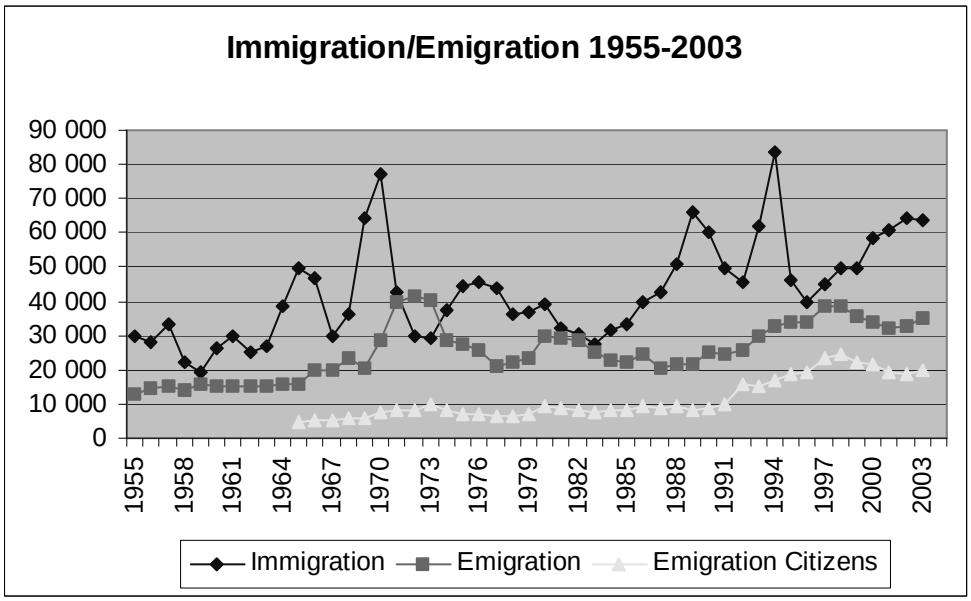
Figures and Tables:

Figure 1: Immigration and Emigration flows, 1955-2003



Source: Statistics Sweden

Figure 2: Percentage of Return/Onward Migrants

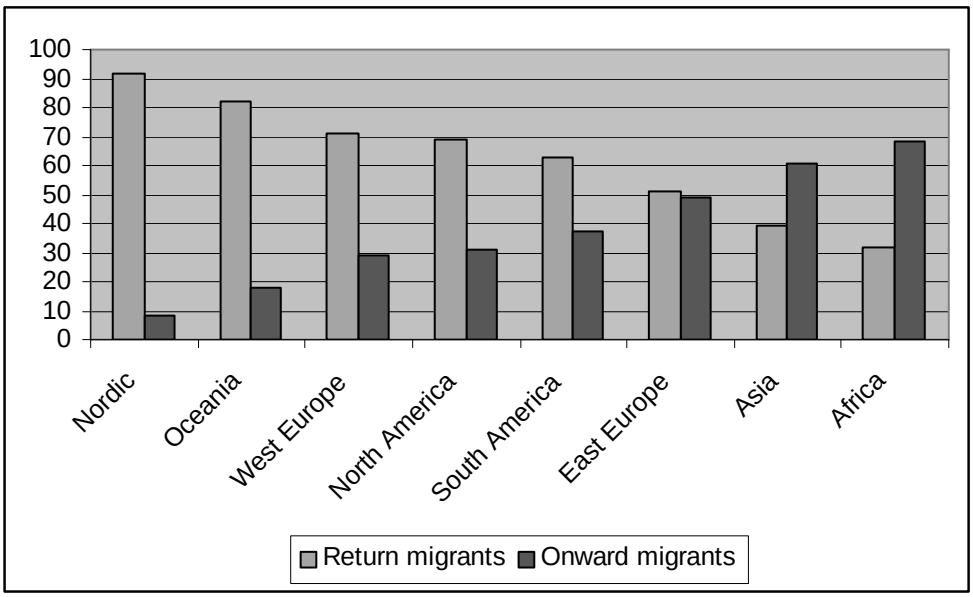


Table 1: Sample Means

	Natives		Immigrants			
	Non-emigrants	**Emigrants**	**Non-emigrants**	**Emigrants**	**Return Migrants**	**Onward Migrants**
Education:						
Primary	0.22	0.13	0.28	0.17	0.19	0.14
	(0.22)	(0.11)	(0.30)	(0.30)	(0.33)	(0.22)
Secondary	0.49	0.41	0.43	0.24	0.23	0.25
	(0.49)	(0.42)	(0.44)	(0.36)	(0.35)	(0.36)
University	0.28	0.44	0.24	0.22	0.20	0.26
	(0.28)	(0.45)	(0.24)	(0.31)	(0.29)	(0.37)
Ph.D.	0.01	0.02	0.01	0.02	0.02	0.03
	(0.01)	(0.02)	(0.01)	(0.03)	(0.02)	(0.05)
Missing	0.003	0.02	0.04	0.35	0.36	0.32
Employment	0.75	0.53	0.54	0.36	0.40	0.28
Income:	1142.89	923.65	788.71	567.04	612.20	463.09
Zero	0.05	0.10	0.17	0.37	0.35	0.40
1-1499	0.65	0.69	0.65	0.53	0.53	0.51
1500-2999	0.28	0.16	0.16	0.08	0.09	0.06
3000-	0.02	0.05	0.01	0.03	0.03	0.03
Age:						
16-25	0.20	0.26	0.17	0.18	0.20	0.12
26-35	0.23	0.41	0.25	0.38	0.38	0.38
36-55	0.45	0.29	0.46	0.38	0.35	0.45
55-64	0.13	0.04	0.13	0.06	0.07	0.05
Female	0.49	0.51	0.51	0.44	0.45	0.43
Married	0.61	0.02	0.55	0.02	0.02	0.02
Children	0.12	0.01	0.13	0.01	0.01	0.01
YSM	-	-	15.3	7.8	6.9	10.0
Cohort	-	-	0.34	0.08	0.07	0.09
Region of Origin:						
Nordic	-	-	0.29	0.40	0.53	0.11
West European	-	-	0.09	0.16	0.16	0.15
East European	-	-	0.23	0.09	0.07	0.15
African	-	-	0.04	0.05	0.02	0.11
Asian	-	-	0.27	0.17	0.09	0.34
North American	-	-	0.01	0.05	0.05	0.05
South American	-	-	0.06	0.07	0.06	0.08
Oceania	-	-	0.002	0.02	0.02	0.01
No. of Obs.	1,728,208	93,106	216,545	107,065	74,638	32,427

Note: Education percentages in parenthesis calculated only for individuals with registered information on highest attained educational level. Employment percentages, calculated as lagged averages, are based on Statistics Sweden November analysis (Årsys) measuring employment status in November of each year.

Table 2: Linear Probability Model of Emigration, Return Migration and Onward Migration.

	Probability of Emigration		Prob. Return Migration	Prob. Onward Migration
	Natives (1)	**Immigrants (2)**	**Immigrants (3)**	**Immigrants (4)**
Education:				
Primary	Ref.	Ref.	Ref.	Ref.
Secondary	0.007***	-0.023***	-0.029***	-0.001
	(0.000)	(0.002)	(0.001)	(0.001)
University	0.037***	0.028***	0.003	0.038***
	(0.000)	(0.002)	(0.002)	(0.002)
Ph.D.	0.085***	0.159***	0.090***	0.181***
	(0.003)	(0.006)	(0.006)	(0.007)
Missing	0.173***	0.318***	0.315***	0.440***
	(0.006)	(0.002)	(0.003)	(0.004)
Income:				
Zero	0.044***	0.040***	0.022***	0.037***
	(0.001)	(0.002)	(0.002)	(0.002)
1-1499	Ref.	Ref.	Ref.	Ref.
1500-2999	-0.002***	-0.024***	-0.020***	-0.009***
	(0.000)	(0.002)	(0.002)	(0.001)
3000-	0.068***	0.089***	0.086***	0.098***
	(0.001)	(0.004)	(0.005)	(0.006)
Age:				
16-25	-0.034***	-0.076***	-0.055***	-0.084***
	(0.001)	(0.002)	(0.002)	(0.002)
26-35	Ref.	Ref.	Ref.	Ref.
36-55	-0.046***	-0.016***	-0.011***	-0.022***
	(0.001)	(0.002)	(0.002)	(0.002)
55-64	-0.068***	-0.018***	0.010	-0.063**
	(0.001)	(0.003)	(0.003)	(0.002)
Female	0.008***	-0.012***	-0.011***	-0.007***
	(0.000)	(0.001)	(0.001)	(0.001)
Married	-0.101***	-0.349***	-0.261***	-0.191***
	(0.000)	(0.001)	(0.001)	(0.001)
Children	-0.033***	-0.109***	-0.084***	-0.071***
	(0.000)	(0.002)	(0.001)	(0.001)
Region of Origin:				
Nordic	-	-0.001	0.021***	-0.067***
		(0.002)	(0.002)	(0.002)
West European	-	Ref.	Ref.	Ref.
East European	-	-0.193***	-0.222***	-0.072***
		(0.002)	(0.002)	(0.002)
North American	-	0.030***	0.040***	0.082***
		(0.004)	(0.005)	(0.006)
South American	-	-0.120***	-0.153***	-0.033***

		(0.003)	(0.004)	(0.003)
African	-	-0.179***	-0.298***	0.014***
		(0.004)	(0.004)	(0.004)
Asian	-	-0.200***	-0.267***	-0.037**
		(0.002)	(0.003)	(0.003)
Oceania	-	0.091***	0.124***	0.109***
		(0.007)	(0.008)	(0.017)
Immigration Year		Yes	Yes	Yes
No. of Obs.	1,821,314	314,231	282,518	241,325
R-squared	0.09	0.50	0.52	0.33

Note: All estimations control for common time effects. Estimations on immigrants include a full set of dummy variables for immigration year. *** denotes significance at 1 percent level, ** at 5 percent level and * at 10 percent level.

Table 3: Income regressions (log average lagged income).

	Natives		Immigrants			
	Non-emigrants (1)	**Emigrants (2)**	**Non-emigrants (1)**	**Emigrants (2)**	**Return Migrants (3)**	**Onward Migrants (4)**
Education:						
Primary	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Secondary	0.251***	0.410***	0.194***	0.239***	0.239***	0.241***
	(0.002)	(0.017)	(0.007)	(0.016)	(0.018)	(0.035)
University	0.332***	0.690***	0.324***	0.444***	0.360***	0.592***
	(0.002)	(0.017)	(0.008)	(0.018)	(0.021)	(0.036)
Ph.D.	0.642***	0.800***	0.617***	0.576***	0.545***	0.638***
	(0.007)	(0.031)	(0.030)	(0.043)	(0.056)	(0.070)
Missing	-1.282***	-0.477***	-0.477***	0.076***	0.064***	0.080*
	(0.072)	(0.086)	(0.049)	(0.021)	(0.022)	(0.050)
Age	0.291***	0.322***	0.228***	0.229***	0.227***	0.235***
	(0.000)	(0.003)	(0.002)	(0.004)	(0.005)	(0.009)
Age-squared	-0.003***	-0.003***	-0.002***	-0.003***	-0.002***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female	-0.323***	-0.420***	-0.262***	-0.420***	-0.451***	-0.354***
	(0.001)	(0.009)	(0.006)	(0.012)	(0.014)	(0.025)
Married	-0.091***	0.028	0.045***	0.005	-0.052	0.118
	(0.002)	(0.029)	(0.006)	(0.046)	(0.054)	(0.085)
Children	0.408***	0.208***	0.161***	0.289***	0.286***	0.348***
	(0.002)	(0.053)	(0.009)	(0.063)	(0.071)	(0.135)
YSM	-	-	0.037***	-0.043***	-0.044***	-0.027***
			(0.001)	(0.003)	(0.003)	(0.005)
YSM-squared	-	-	-0.0005***	0.001***	0.001***	0.001***
			(0.000)	(0.000)	(0.000)	(0.000)
Origin:						
Nordic	-	-	0.144***	0.381***	0.262***	0.703***
			(0.010)	(0.020)	(0.021)	(0.047)
West Euro.	-	-	Ref.	Ref.	Ref.	Ref.
East Euro.	-	-	-0.257***	-0.487***	-0.693***	-0.126***
			(0.012)	(0.029)	(0.040)	(0.048)
North Am.	-	-	-0.029	-0.184***	-0.287***	0.127*
			(0.028)	(0.038)	(0.044)	(0.077)
South Am.	-	-	-0.251***	-0.283***	-0.288***	-0.174***
			(0.015)	(0.028)	(0.033)	(0.054)
African	-	-	-0.436***	-0.800***	-0.914***	-0.461***
			(0.021)	(0.036)	(0.059)	(0.052)
Asian	-	-	-0.571***	-0.644***	-0.741***	-0.344***
			(0.012)	(0.024)	(0.035)	(0.042)
Oceania	-	-	0.105*	-0.119**	-0.367***	0.726***
			(0.061)	(0.057)	(0.064)	(0.118)
Immigration Year			Yes	Yes	Yes	Yes
No. of Obs.	1,644,287	83,631	177,559	65,351	46,931	18,420
R-squared	0.44	0.39	0.32	0.19	0.17	0.19

Note: All estimations control for common time effects. Standard errors corrected for heteroscedasticity. *** denotes significance at 1 percent level, ** at 5 percent level and * at 10 percent level.

Figure 3: Predicted Age-Income Profile: Foreign-born Men

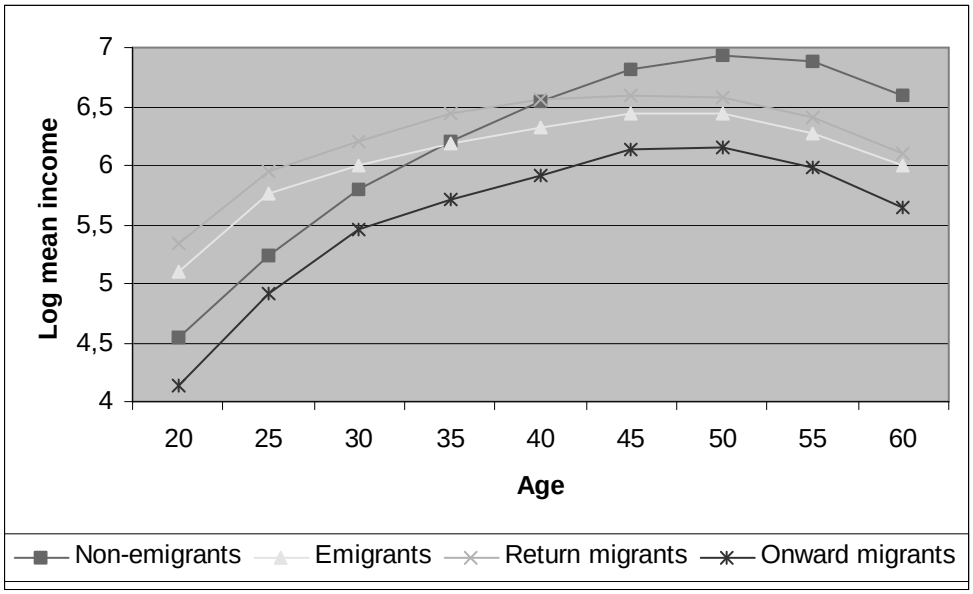
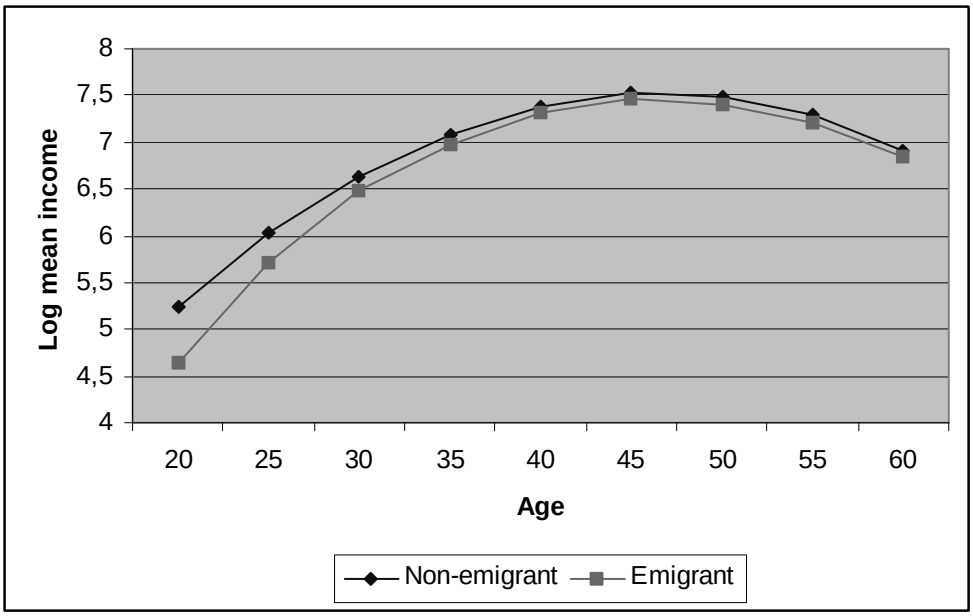


Figure 4: Predicted Age-Income Profile: Native Men



Appendix

Figure A1: Predicted Age-Income Profile: Foreign-born Women

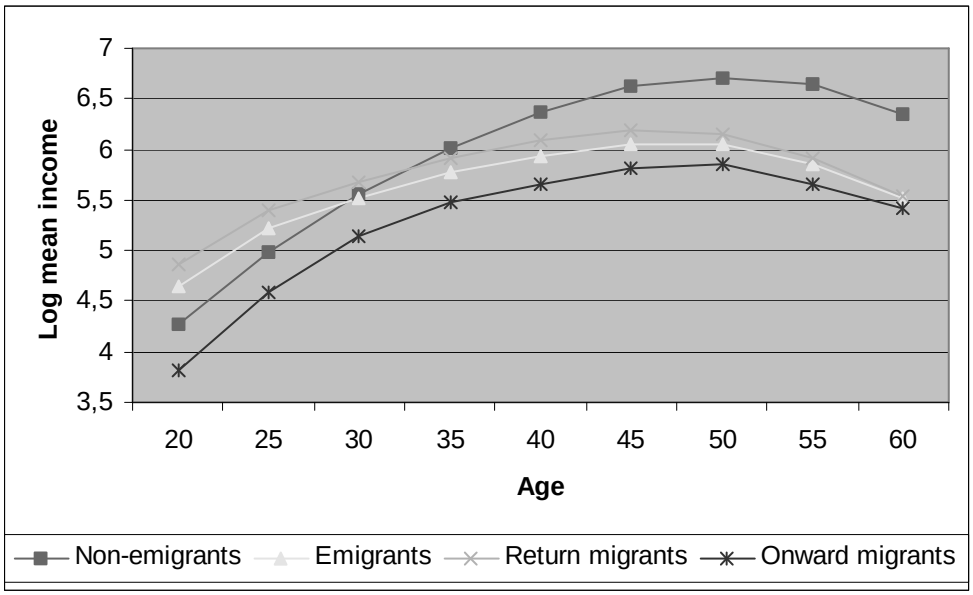


Figure A2: Predicted Age-Income Profile: Native Women